AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method for the production of totipotent tissue culture of a plant ~~of the Class Monocotyledonae~~ that is selected from the group consisting of *Spartina alterniflora, Spartina cynosuroides, Spartina pectinata, Spartina spartinae,* and *Spartina patens* ~~a family that is a member of the group consisting of Poaceae, Cyperaceae, Juncaceae, and Typhaceae~~, the method comprising:

selecting an explant of living tissue from the plant;

cultivating the tissue on a primary medium which contains an auxin and a cytokinin to produce totipotent tissue; and

transferring the totipotent tissue to a secondary medium containing a cytokinin and cultivating to produce plantlets having roots and shoots.

2. – 4. (cancelled)

5. (previously presented) The method according to claim 1, comprising, in addition:

moving the plantlets to a tertiary medium which is free of added plant hormones.

6. (cancelled)

7. (previously presented) The method according to claim 1, wherein the explant comprises an inflorescence.

8. (previously presented) The method according to claim 1, wherein the explant is an immature inflorescence.

9. – 14. (cancelled)

15. (previously presented) The method according to claim 1, wherein the auxin of the primary medium comprises 2,4-dichlorophenoxyacetic acid, picloram, and indolebutyric acid and the cytokinin of the primary medium comprises thidiazuron, zeatin, and dimethylallyladenine.

16. (cancelled)

17. (previously presented) The method according to claim 1, wherein the cytokinin in the secondary medium is thidiazuron.

18. (previously presented) The method according to claim 1, comprising the introduction of a heterologous gene into the totipotent tissue.

19. (previously presented) The method according to claim 18, wherein the introduction of a heterologous gene is effected by cocultivation of the totipotent tissue with *Agrobacterium tumefaciens* that results in the transfer of one or more genes from *A. tumefaciens* to the totipotent tissue.

20. (original) The method according to claim 18, wherein the introduction of a heterologous gene is effected by DNA transfer.

21. (previously presented) The method according to claim 1, further comprising acclimating the plantlets in soil.

22. (original) The method according to claim 21, comprising the introduction of a heterologous gene into the totipotent tissue.

23. (previously presented) The method according to claim 22, further comprising the use of the transgenic plantlets for phytoremediation or in phytoreactors.

24 - 27 (canceled)

28. (withdrawn) The method according to claim 18, further comprising

providing at least 10 plants that possess the same genetic characteristics;

establishing the plants in a liquid medium; and

contacting the roots of the plants in the liquid medium with an environmental pollutant,

thereby causing the environmental pollutant to be removed from the liquid medium.

29. (cancelled)

30. (withdrawn) The method according to claim 21, further comprising

providing at least 10 plants that possess the same genetic characteristics; and

contacting the roots of the plants with a land area that is contaminated with an environmental pollutant,

thereby causing the environmental pollutant to be removed from the land area.

31. (cancelled)

32. (previously presented) The method according to claim 18, wherein the duration of the cocultivation of the totipotent tissue with *Agrobacterium tumefaciens* is about four days.

33. – 35. (cancelled)

36. (previously presented) The method according to claim 1, wherein the auxin of the primary medium is selected from the group consisting of 2,4-dichlorophenoxyacetic acid, picloram, and indolebutyric acid and the cytokinin of the primary medium is selected from the group consisting of benzyladenine, thidiazuron, zeatin, isopentyladenine, trans-zeatin, and dimethylallyladenine.

37. (previously presented) The method according to claim 1, wherein the auxin of the primary medium comprises 2,4-dichlorophenoxyacetic acid and picloram, and the cytokinin comprises benzyladenine, zeatin and thiadiazuron.

38. (previously presented) The method according to claim 1, wherein the auxin of the primary medium comprises 2,4-dichorophenoxyacetic acid, indolebutyric acid, and picloram, and the cytokinin of the primary medium comprises adenine hemisulfate, isopentyladenine, trans-zeatin, and thiadiazuron.

39. (previously presented) The method according to claim 38, wherein the plant hormones are present in the following amounts in the primary medium: 2,4-dichlorophenoxyacetic acid, 0.5 mg/l; indolebutyric acid, 1.0 mg/l; picloram, 0.12 mg/l; adenine hemisulfate, 80 mg/l; isopentyladenine, 0.5 mg/l; trans-zeatin, 0.5 mg/l; and thiadiazuron, 3 mg/l.

40. (previously presented) The method according to claim 17, wherein the thiadiazuron is present at a concentration of 0.02 mg/l.

41. (currently amended) A method for the production of totipotent tissue culture of a plant that is selected from the group consisting of *Spartina alterniflora, Spartina cynosuroides, Spartina pectinata, Spartina spartinae, and Spartina patens* ~~of the Class Monocotyledonae,~~ the method comprising:

selecting an explant of living tissue from the plant;

cultivating the tissue on a primary medium which contains at least two different auxins and a cytokinin to produce totipotent tissue; and

transferring the totipotent tissue to a secondary medium containing a cytokinin and cultivating to produce plantlets having roots and shoots.

42. – 45. (cancelled)

46. (previously presented) The method according to claim 41, wherein the explant comprises an inflorescence.

47. (previously presented) The method according to claim 46, wherein the explant is an immature inflorescence.

48. (previously presented) The method according to claim 41, wherein the at least two auxins of the primary medium are selected from the group consisting of 2, 4-dichlorophenoxyacetic acid, picloram, and indolebutyric acid and the cytokinin of the primary medium is selected from the group consisting of benzyladenine, thidiazuron, zeatin, isopentyladenine, trans-zeatin, and dimethylallyladenine.

49. (previously presented) The method according to claim 41 wherein the auxin of the primary medium comprises 2, 4-dichlorophenoxyacetic acid, picloram, and indolebutyric acid and the cytokinin of the primary medium comprises thidiazuron, zeatin, and dimethylallyladenine.

50. (previously presented) The method according to claim 41, wherein the auxin of the primary medium comprises 2,4-dichlorophenoxyacetic acid and picloram, and the cytokinin comprises benzyladenine, zeatin and thiadiazuron.

51. (previously presented) The method according to claim 41, wherein the auxin of the primary medium comprises 2,4-dichorophenoxyacetic acid, indolebutyric acid, and picloram, and the cytokinin of the primary medium comprises adenine hemisulfate, isopentyladenine, trans-zeatin, and thiadiazuron.

52. (previously presented) The method according to claim 41, wherein the plant hormones are present in the following amounts in the primary medium: 2,4-dichlorophenoxyacetic acid, 0.5 mg/l; indolebutyric acid, 1.0 mg/l; picloram, 0.12 mg/l; adenine hemisulfate, 80 mg/l; isopentyladenine, 0.5 mg/l; trans-zeatin, 0.5 mg/l; and thiadiazuron, 3 mg/l.

53. (previously presented) The method according to claim 41, wherein the cytokinin in the secondary medium is thidiazuron.

54. (previously presented) The method according to claim 53, wherein the thiadiazuron is present at a concentration of 0.02 mg/l.

55. (previously presented) The method according to claim 41, comprising the introduction of a heterologous gene into the totipotent tissue.

56. (previously presented) The method according to claim 55, wherein the introduction of a heterologous gene is effected by cocultivation of the totipotent tissue with *Agrobacterium tumefaciens* that results in the transfer of one or more genes from *A. tumefaciens* to the totipotent tissue.

57. (previously presented) The method according to claim 56, wherein the duration of the cocultivation of the totipotent tissue with *Agrobacterium tumefaciens* is about four days.

58. (previously presented) The method according to claim 55, wherein the introduction of a heterologous gene is effected by DNA transfer.

59. (previously presented) The method according to claim 41, further comprising acclimating the plantlets in soil.

60. (withdrawn) The method according to claim 55, further comprising the use of the transgenic plantlets for phytoremediation or in phytoreactors.

61. (withdrawn) The method according to claim 55, further comprising:

providing at least 10 plants that possess the same genetic characteristics;

establishing the plants in a liquid medium; and

contacting the roots of the plants in the liquid medium with an environmental pollutant, thereby causing the environmental pollutant to be removed from the liquid medium.

62. (withdrawn) The method according to claim 55, further comprising:

providing at least 10 plants that possess the same genetic characteristics; and

contacting the roots of the plants with a land area that is contaminated with an environmental pollutant, thereby causing the environmental pollutant to be removed from the land area.